Application No.: 10/644,406
Response to Restriction fax-filed November 12, 2004
Restriction Requirement mailed October 18, 2004

Amendments to the Claims:

Please cancel claims 8 and 9 as follows. The listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (original) A robotic system comprising:

a master controller having an input device movable in a controller workspace;

a slave having an end effector, a linkage movably supporting the end effector, and at least one actuator operatively coupled to the end effector, the actuator moving the end effector in a workspace in response to slave actuator signals;

an imaging system including an image capture device with a field of view movable in the workspace and a linkage movably supporting the image capture device, the imaging system generating state variable signals indicating the field of view; and

a processor coupling the master controller to the slave arm, the processor generating slave actuator signals by mapping the input device in the controller workspace with the end effector in the surgical workspace according to a transformation, the processor changing the transformation in response to a tool change signal when the tool coupled to the holder is · replaced by a selected alternative tool.

2.   (original) The surgical robotic system of claim 1, wherein the field of view of the imaging system is movable within the surgical workspace, the imaging system generating state variable signals indicating the field of view, and wherein the processor derives the transformation in response to the state variables of the imaging system.

3.   (original) The surgical robotic system of claim 1, wherein:

the master controller includes a linkage supporting the input device so that the input device can move in the controller workspace with a first number of degrees of freedom;

the slave has a plurality of actuators operatively coupled to the end effector so that the end effector can move in a surgical workspace with a second number of degrees of freedom in response to slave actuator signals, the second number being less than the first number; and

the processor generates the slave actuator signals by mapping the input device in the controller workspace with the end effector in the surgical workspace.

4.   (original) The surgical robotic system of claim 3, wherein the linkage of the master controller has at least one redundant degree of freedom.

5.   (original) The surgical robotic system of claim 3, wherein the slave comprises a manipulator arm releasably supporting the tool holder, wherein an alternative tool allows movement of an alternative end effector with at least one more degree of freedom than the end effector when the alternative tool is mounted to the tool holder, wherein the processor inhibits movement of the input device in the controller workspace when the tool is in use so that the input device is movable in the second number of degrees of freedom.

6.   (original) The surgical robotic system of claim 1, wherein the processor calculates the transformation in response to a signal indicating at least one member of the group consisting of a movement of the camera, a decoupling and repositioning of one of the master and the slave relative to the other, a change in scale of the mapping, manual movement of a passive joint of the slave, and association of the master with an alternative slave.

7.   (original) A surgical robotic system comprising:
a master controller having an input device movable in a controller workspace;
a slave comprising a slave arm and a first tool releasably mountable on the arm, the first tool having a first end effector movable in a surgical workspace in response to slave actuator signals;
a second tool releasably mountable on the slave in place of the first tool, the second tool having a second end effector movable in the surgical workspace in response to the slave actuator signals, the second tool being kinematically dissimilar to the first tool; and
a processor coupling the master controller to the slave arm, the processor generating the slave actuator signals by mapping the input device in the controller workspace with the end effector of the mounted tool in the surgical workspace.

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      8.   (cancel)

      9.   (cancel)